6 Steps for Implementing Successful Performance Improvement Initiatives in Healthcare

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Healthcare organizations routinely pursue performance improvement initiatives to improve clinical outcomes and patient experiences and reduce organizational costs. If these efforts are not well executed, however, they can become black holes that suck up time, money, and resources while yielding little in the way of real, sustainable improvements.

A major reason performance improvement efforts fail to produce desired results is that organizations often mistakenly think of performance improvement as a series of one-off projects, each with its own beginning, middle, and end. To be effective and sustainable, an organization’s performance improvement initiatives should all be conceived and performed in the context of an ongoing performance program.

The initial goals for such a program should be to prioritize performance improvement efforts so that the organization can achieve early successes and build momentum for future performance improvement efforts. Health Catalyst® recommends a framework, known as the Three System Approach for performance improvement:

- Improving measurement and analytics (an analytics system)
- Creating permanent cross-functional workgroup teams focused on identifying, deploying and monitoring the effectiveness of quality improvements (an adoption system)
- Deploying a data-driven approach to implementing evidence-based best practices (a best practice system)

Six Steps to Implementing a Performance Improvement Program

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Step 1: Integrate Performance Improvement into Your Strategic Objectives

Healthcare is a complex, adaptive system where interactions and relationships of different components simultaneously affect and are shaped by the system. As such, it is important for performance improvement to be integrated within the healthcare organization’s strategic objectives. Strategic objectives such as becoming an accountable care organization (ACO), focusing on population health management, or developing a cardiovascular center of excellence, all require performance improvement in order to be successful. Integrating performance improvement also helps avoid wasting time, effort, and money on programs that may yield little overall benefit.

Step 2: Use Analytics to Unlock Data and Identify Areas of Opportunity

Performance improvement requires an analytics system that integrates the organization’s data sources (clinical, claims, financial, operational, etc.), and that facilitates quick and easy data sharing. Only with appropriate analytics can an organization identify specific areas of opportunity among strategic areas of focus.

Healthcare data analytics is required for any sustainable performance improvement initiative. It forms the foundation of discussion and informs decisions. Yet while healthcare organizations have mountains of clinical, claims, financial, operational, patient experience and other data, most of it is locked away in point solutions built for a specific purpose.

Performance improvement requires an analytic system that integrates the organization’s data sources, and quickly and easily unlocks data, and enables effective sharing of data and the addition of new data sources. Doing so allows interdisciplinary teams to analyze the data and discover patterns that lead to insights. This should be an Agile, interactive process that produces balanced metrics. Health Catalyst offers a unique solution with our Late-Binding™ Enterprise Data Warehouse.

The analytic system also needs to be able to scale over time to enable different levels of healthcare analytics. As an organization moves up the hierarchy of the Analytics Adoption Model (see Figure 1), data is used as an advantage and strength, helping the organization to compete more effectively.
The starting point (Level 1) for sustainable performance improvement is an enterprise data warehouse (EDW) that can aggregate and store data from fragmented point solutions in one place and make it available to interdisciplinary teams.

Level 2 in the model is a standardized vocabulary and patient registries. Having a master vocabulary is critical for sharing data. Registries allow the organization to define the cohort of patients for a specific performance improvement program. The use of pre-defined patient registries and starter set measures to evaluate key metrics such as: financials, length of stay and readmissions provides a basis for initiating improvement projects.

Such was the experience of Texas Children’s Hospital in Houston. Before deploying an enterprise-wide late binding EDW and healthcare analytics, the hospital required roughly six months to develop a clinical improvement initiative. Having a healthcare EDW in place reduced this time in half because the data was available and already integrated across the different clinical, operational and financial systems. Implementing an analytics application that included patient registries and a starter set of common metrics further reduced the time required to just two weeks since the patient population (cohorts) were already defined (ICD codes, APR DRGs, clinical data, etc..), and the teams could easily compare data (admissions, readmissions, LOS, etc..) across the different patient cohorts to help identify the greatest opportunities.
In addition to speeding the development of performance improvement programs, an analytics application can help an organization identify priorities for improvement efforts by uncovering variation. Variation points to a potential for standardizing processes, because the existence of variation inherently means that some care practices are more efficient and produce higher-quality outcomes than others, while there also is a greater likelihood that some practices are not achieving optimum outcomes. Hospitals and health systems will have a significant opportunity for care improvement if they can identify their highest-performing practices and begin to make those practices and evidence-based practices the standards for all caregivers.

The Anatomy of Healthcare Delivery framework, shown in Figure 2, and developed by David A. Burton, MD demonstrates the potential pathways patients can go through in their interactions with the delivery system. It is a conceptual framework that enables one to organize their thinking about the care delivery process and to focus their attention on key processes and decision-making points. The degree to which an organization standardizes their approach in each of the knowledge asset categories (indicated by the orange and blue boxes shown in the diagram) will impact the degree of variation in care delivery.

Figure 2: Anatomy of Healthcare Delivery Framework
Once an organization examines how patients flow through the care delivery system and its critical decision points, they can use the information to create a logical framework to organize a Clinical Integration hierarchy, as illustrated in Figure 3. The Clinical Integration hierarchy organizes clinical programs based on physician specialists and other clinicians who share management of care processes and who are responsible for the ordering of care for patients—versus traditional service lines that are mostly used for marketing purposes. The teams either work on things together or one team's output is another team's input (e.g., OB-GYN sub-specialists and neonatologists).

With clinical programs and clinical support services broken into categories that align with the way care is delivered, an organization can use a Pareto approach (also known as the 80/20 rule), to identify their highest opportunities: the clinical programs with the highest count, highest cost or those that have the highest variation. One can review the ranking to see which key clinical care processes make up the majority of the care provided.

Variation in cost can be a good surrogate for quality of care, because
higher cost may result from delivery of inefficient or unnecessary services. As the prescribers of care, clinicians are one of the greatest influencers in managing variable cost, which represents direct cost in departments. By focusing on variable cost — looking at the volume of procedures and cost per procedure, in particular — they can identify avoidable cost and begin working with clinicians, using evidence-based practices, to address them.

**The Health Catalyst Key Process Analysis** application is based on the Pareto principle, and is used to prioritize performance improvement efforts. Cost is displayed on the x-axis, as shown in Figure 4; the y-axis shows the variation in resources consumed. The clinical programs with the highest cost and highest variation are in box one. Septicemia is one care process that shows both high cost and high variation.

![Internal variation versus resource consumption](image)

**Figure 4: Sample Health Catalyst Key Process Analysis**

**Data governance** is also a key component of the analytic strategy. A data governance committee should be responsible for understanding and implementing local data standards (facility codes, department codes, etc.); as well as regional and industry standards (CPT, ICD,
SNOMED, LOINC, etc.). In addition to coded data standards, the committee is also involved in the standard use of algorithms to bind data into analytic algorithms that should be consistently used throughout the organization, such as calculating length of stay, defining readmission criteria, defining patient cohorts, and attributing patients to providers in accountable care arrangements.

**Step 3: Prioritize programs using a combination of analytics and an adoption system**

Successfully improving clinical outcomes and streamlining operations requires a strong organizational commitment and changes in culture, organizational structure, staff education, and workflow processes, what Health Catalyst calls an adoption system. Consequently, any organization that embarks on this performance improvement journey should first assess its readiness for change. Examples of criteria that are evaluated in an organizational readiness assessment include clinical leadership readiness, data availability, shared vision, and administrative support (e.g., data manager, outcomes analyst availability).

A readiness assessment helps the organization determine how ready the teams are to accept change, to estimate what, if any, impact there is on staffing, and the potential impact on front-line caregivers. Understanding the strategic objectives and integrating results from a readiness assessment, along with the analytics, help the organization prioritize which care families (clinical services) to begin with.

**Step 4: Define the Performance Improvement Program’s Permanent Teams**

The organization will require permanent performance improvement teams to review and analyze data, define evidence-based and best practices, and monitor ongoing results. Improvement teams should be created to coincide with an organization’s internal structure. One way to organize teams is described below and shown in Figure 5.
**Team interactions**

**Guidance team.** A guidance team should be assigned accountability for clinical quality across the continuum of care in a specific domain (such as Women and Children). The primary role of such a team should be to select goals, prioritize work, allocate resources, and remove barriers. The team should then delegate accountability to clinical improvement teams to improve care.

**Clinical implementation team.** These teams typically are led by a physician and nurse and consist of front-line staff who understand the processes targeted for improvement. Their role is to define workgroup outputs and lead the implementation of process improvements. Whenever possible, these teams should represent a broad range of departments, clinics, hospitals, and regions to help disseminate knowledge across the organization. These teams generally create work groups to perform the detailed work.

**Work groups.** Work groups are generally led by a physician and nurse subject matter expert and include best practices, analytics, and technical experts. These teams meet frequently to analyze processes and data and to look for trends and improvements. Their role is to develop Aim Statements, identify interventions,
draft knowledge assets (e.g., order sets, patient safety protocols, etc.), define the analytic system and provide ongoing feedback of the status of the care process improvement initiatives.

Step 5: Use a best practice system to define program outcomes and define interventions

Workgroups are responsible for developing Aim Statements, part of the best practice system, that establish clear clinical improvement goals and integrate evidence-based practices to standardize care. For examples of Aim Statements that relate to heart failure, and are based on evidence-based practice, see Sample Work Group Aim Statements: Heart Failure.

Sample Work Group Aim Statements: Heart Failure.

By developing Aim Statements for a performance improvement initiative, an organization can ensure that all stakeholders understand the initiative’s goals. The following sample Aim Statements might be developed for a performance improvement initiative focused on improving performance in treatment of patients with heart failure.

Aim Statement 1: Data quality. By [date], establish a baseline for all-cause 30-day readmission rates for patients found in the heart failure cohort, and reconcile and validate against the previous year's baseline heart failure readmission rates by [date].

Aim Statement 2: Risk stratification. By [date], identify high-risk patients with heart failure and establish a baseline for 30-day readmissions for those patients. Develop a risk stratification model to predict the likelihood of all-cause 30-day readmission rates for all patients with heart failure.

Aim Statement 3: Intervention. By [date], the heart failure team will develop one evidence-based process metric (such as number of medication reconciliation reviews or number of follow-up appointments) and one balance metric (such as ED admissions or observation days) that will have an effect (X) on all-cause 30-day readmission rates for high-risk patients.

AIM Statement 4: Cost. Reduce the value-based penalty by 0.2 percent for heart failure and improve hospital payments by $75,000 for next fiscal year.
The focus of performance improvement initiatives for many organizations tends to be on low-performance outliers—that is, on identifying instances where costs are much higher and outcomes substantially poorer than averages among caregivers. However, a more effective approach is to identify those practices that consistently lead to the best outcomes and promote them, with evidence-based guidelines, to improve outcomes across the board, as illustrated in Figure 6.

![Approach to improvement: focus on better care](image)

**Figure 6: Approach to Improvement: Focus on Better Care**

The analytics platform described early in this paper also can be used to identify and eliminate waste that can be an outgrowth of non-adherence to evidence-based practices. This type of waste tends to fall in three categories:

**Ordering waste.** This waste results from providers ordering tests, care, and supplies that do not add value. An example of such waste might be the ordering of unnecessary chest X-rays for patients with asthma because of a faulty order set, something [Texas Children’s Hospital](https://www.texaschildrens.com) discovered and addressed in their process improvement programs.
Workflow waste. This waste results from inefficiencies in delivering tests, care, and procedures. As an example, some healthcare organizations are still manually having charge nurses fax a nightly list of patients with urinary catheters and central lines to their infection preventionist team, an untenable manual process as agencies, such as the Centers for Medicare and Medicaid Services (CMS) expands surveillance activities to an enterprise-wide, versus critical care, focus.

Several hospitals have been able to reduce their catheter-associated urinary tract infection (CAUTI) and central-line associated bloodstream infections (CLABSI) surveillance activities by as much as 50 to 90 percent through the use of an analytic platform that automatically identifies the patient population and integrates an electronic surveillance algorithm, allowing nurses to focus more on infection prevention versus manual reporting.

Defect waste. If delivery of tests, care, and procedures is defective, the resulting waste could lead not only to higher costs but also to patient harm. Inpatient fall prevention is an example of a defect, deemed to be avoidable. Falls can cause injury (ies) to the patient and incur additional costs to treat the injury (ies) and may require the patient to have an increased LOS.

Step 6: Estimate the ROI

As the guidance team sets priorities for performance improvement, the team also should take time to estimate the potential ROI for each initiative based on available information. The team can start by identifying organizational costs and estimating benefits using tools such as industry benchmarks for similar projects, vendor case studies, and internal estimates. Most organizations will need to educate their clinicians, operations and finance departments on the value of sharing data and working together on inter-disciplinary teams, rather than keeping everything in silos.

Next, the team should identify direct benefits and savings (either from enhanced efficiency and productivity) or from clinical improvement and waste reduction. Then, the team can identify indirect benefits, such as a reduction in future infections or an improvement in patient satisfaction.

The team also should consider revenue opportunities such as higher market share and patient volume, an increase in contract compliance, or a reduction of bad debt. A revenue opportunity example might be a payer who is willing to pay an organization a
bonus for reducing unnecessary pre-term deliveries. Another revenue opportunity example is reducing the number of referrals outside of the healthcare network.

Building the Framework

Creating a foundation for sustainable improvement and prioritizing initiatives does not have to be overwhelming. By following these steps and establishing a framework for performance improvement based on analytics, the right teams, and evidence-based practices, an organization can obtain the right tools to achieve and sustain performance improvement gains into the future.

What failures and successes have you had in your performance improvement initiatives?

About the Authors

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